Problem 1

On average the national annual salary is 40,000 dollars with a standard deviation $\sigma = 30,000$, what is the probability that your salary will be over 100,000 dollar in ten years?

Solution:

mean = 40,000 , standard deviation = 30,000 , lower limit = 100,000

upper limit = any ridiculously high number

answer: Keep dreaming 2.3%

Problem 2

If you have a batch of parts that have 3% defective rate. If you pick 10 parts out of the batch, what is the probability that only 1 will be defective?

Solution:

n = 10, p = 0.03 , x = 1

P(x=1) = 0.228

Problem 3

If I am randomly picking a person in this class of 24 people, what is the probability that it would be you?

Solution:

P(you) = 1/24

Problem 4

If on average you have to spent 5 hours shopping for Christmas presents every year with a variance of 9 hour, what is the probability that you will spent more than 7 hours shopping this year?

Solution:

mean = 5 , standard deviation = 3, lower limit = 7, upper limit = any high number

answer: 25%

Problem 5

If on average there are 10 people in line infront of you to check out, and if each person takes 5 minutes, what is the probability that you will be stuck behind a line for over an hour?

Solution:

$\lambda = 10, x = 12$ people

P(x > 12) = 30%

Problem 6

If the probability of you going on a good date is 10%, what is the probability that out of the next 10 dates, you will have at least 1 good date?

Solution: n = 10 , p = 0.10, x = 1,2,3,4,5,6,7,8,9,10

P(x) = 0.65